

NUTRITION FOUNDATION OF INDIA

STUDY OF THE CURRENT STATUS AND RELEVANCE OF COMMUNITY
NUTRITION AND HEALTH PROGRAMS THROUGH THE HEALTH CARE
SYSTEM

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Preface

The report of work carried out by the Nutrition Foundation of India in two regions of India, namely Baroda and Delhi, regarding the current status and relevance of community nutrition and health education programs through Health Care and related systems is briefly presented in the following Chapters. The Foundation gratefully acknowledges the financial assistance provided by the National Council for Educational Research and Training, for carrying out these studies.

C. Gopalan
President
Nutrition Foundation of India

Part I

The Study in Baroda Region

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LIST OF ABBREVIATIONS

ICDS	Integrated Child Development Services
NHE	Nutrition Health Education
ICMR	Indian Council of Medical Research
NFI	Nutrition Foundation of India
PHC	Primary Health Centre
CDPO	Child Development project Officer
AW	Anganwadi
AWW	Anganwadi Worker
HW	Health Worker
MO	Medical Officer
MDM	Mid Day Meal Programme
GLV	Green Leafy Vegetables
ANM	Auxiliary Nurse Mid Wife
FHW	Female Health Worker

INTRODUCTION

The term 'nutrition education' applies to any communications system that teaches people to make better use of available food resources. Nutrition education gained international recognition in the 1950s and in 1958 a joint FAO/WHO Expert Committee on Nutrition reported that 'Education' in nutrition is a necessary part of practical programs to improve human nutrition...and recommended that schools, MCH and Public Health Centres, community development programs etc. be used as channels for nutrition education (Zeitlin and Formacion, 1981).

Available data indicates that Nutrition-Health Education (NHE) alone as a primary intervention without supportive food or health services may not be very successful. Conversely, any supplementary feeding program should, at the very least, contain program information and NHE components (Gopaldas, 1978; Seshadri, 1984). A sub-study in Project Poshak in Madhya Pradesh (Gopaldas et al, 1975) revealed that the total package of services consisting of a food supplement, medical services and child care education resulted relatively in the best nutritional status for the intervened pre-school children. Currently, NHE messages are passed on to the community through the Integrated Child Development Services (ICDS), the schools, the health-care system (e.g. Primary Health Centres, Under-five Clinics), the mass media and non-formal adult education programs. The first three channels for imparting NHE will be briefly discussed below.

THE ICDS :

Amongst the national programs, the ICDS is the only one that incorporates strong components of health and nutrition education

services (Gopaldas, 1978). NHE in the ICDS is expected to be given to all women 15-44 years of age with priority to pregnant and lactating women. The key educator is the Anganwadi worker (AWW) through ^{her} ~~their~~ daily contacts with the community.

Despite the acknowledged importance of NHE in ICDS, it is not given the priority it deserves in actual implementation as some reports reveal. According to a planning commission report (PEC, 1981) fewer than half of all Anganwadis (AW) surveyed offered any NHE in 1977 and of these, fewer than 19% of all eligible women had ever received NHE. Inability of the AWW to find time for NHE during her busy schedule at the AW; low credibility of the AWW as a health worker; extremely limited participation of the ICDS supervisory staff in NHE; poor community participation and lack of planning an ICDS strategy by the authorities were the other lacunae brought out in the report.

Similarly, an ongoing study in this department (Seshadri and Gopaldas, unpublished) has revealed that in tribal Gujarat, the AWW spent 90% of her time at the AW on preschool activities while 10% was spent on other activities like record keeping and NHE. Priority accorded to NHE was low. Though the AWW reported that they made about 5 home visits a day, most of the time the mothers were not available as they were away at work.

The School System

Despite some of its obvious limitations such as poor enrolment and high dropout rate of students, our vast readymade infrastructure of about 5 lakh rural primary schools has an immense potential of

profoundly influencing not only the school children but also the community by way of health care. Good habits of personal hygiene and wholesome dietary practices are best inculcated and promoted in the impressionable and formative years of childhood and youth. The rural school system assumes added importance as regards NHE in view of the current inadequacies of the Health System (Nutrition Foundation of India, 1984).

In this context, a UNICEF sponsored NCERT Project conducted during 1975-1980 has been a worthwhile attempt since it sought to introduce, in a substantial measure, a nutrition-health-environmental sanitation (NHEES) component in the primary school curriculum and to involve school teachers in conveying NHE messages to the pupils as well as to the community at large. An evaluation carried out by the Nutrition Foundation of India (NFI, 1984) indicated that the project resulted in an increased interest and awareness regarding NHEES among students and their families and a change in some (not all) of their undesirable health-related practices. There appeared to be a need to ^{firstly} update the curriculum and make it more relevant to local conditions, ^{secondly} to intensify training of teacher-trainers and teachers also, and ^{thirdly} to improve the strategies of communication of NHEES messages to the community through the teachers.

The Health Care System

Since health personnel at various levels enjoy considerable credibility and influence among all communities with regard to health matters, their participation, even in a small way in health education programs, will ^{lend} credibility and to the programs.

An ICMR sponsored study in this department (Seshadri and Gopaldas, 1983) further highlighted the fact that the present medical syllabi of the Baroda Medical College did not accord sufficient importance to the teaching of human nutrition, which is scattered over many specialities resulting in a blurred image of nutrition. Also, whereas interns and Resident Medical Officers (RMOs) had a satisfactory level of the knowledge of nutrition, the undergraduate students and general practitioners of the city did not. Correct knowledge reinforced good and relevant practices with regard to nutrition amongst the doctors while inadequate or inaccurate knowledge led to its poor application in practice. Thus, there is a need for strengthening the nutrition component in the medical curriculum and for sufficiently orienting the medical practitioners and students on the importance of NHE in their daily practice.

Consequently, ⁱⁿ order to throw more light on the current status and relevance of NHE through the ICDS, the health care, and school systems, the present study was undertaken.

MATERIALS AND METHODS

The broad objectives of the present study were :

1. To study the major nutritional and health problems of the urban, rural and tribal areas studied which should be addressed through Nutrition-Health Education (NHE).
2. To study the status and relevance of on-going NHE programs and the communication media used in the health sector (the Primary Health Centres mainly), the ICDS Anganwadis and primary schools.
3. To compare the knowledge and certain health-nutrition practices of beneficiary families in ICDS and non-ICDS blocks in the urban, rural and tribal areas.
4. To identify the lacunae in the present NHE strategy in the ongoing programs and suggest changes for improvement.

The information related to objectives 1 and 2 was obtained from interviews with the field level officers and functionaries such as the ICDS Child Development Project Officers, Medical Officers of PHCs, Health Workers, School Teachers and Anganwadi workers. This was supported by observations on NHE activities made by the investigators. Information related to objective 3 was obtained from interviews with the beneficiary families in ICDS and non-ICDS areas.

Selection of Sample

Information was collected from representative urban, rural and tribal settings. Within each type of setting - 4 slums were selected in the urban area, 8 villages in rural and 4 villages in

tribal areas. Within each village/slum 50 households were randomly selected to yield 800 households in all. Further, within each type of setting half the number of villages or slums were covered by the ICDS while the other half were not. Such a sampling design permitted comparisons of ICDS versus non-ICDS communities each within the slum, rural or tribal setting respectively.

The urban study site was Baroda where slums in Manjalpur and Kumbharwada areas were included as the ICDS study sites while those in Akota were the non-ICDS slums. The rural non-ICDS study sites were villages Sadhli, Chandod, Makni and Jabugam in the Sinor, Dabhoi, Sankheda and Jetapur Districts respectively. The rural ICDS study sites were villages Devkarnamuwada, Bahial, Baria and Sahia in Ahmedabad district. In the tribal areas, villages Kawant and Agar in districts Chhotaudepur and Tilakwada were the ICDS study sites while the non-ICDS ones were Bhatpur and Nana ⁱⁿ Amadarain _{in} districts Sankheda and Jabugam respectively.

Instruments for Data Collection

Section A : Information regarding ongoing Nutrition-Health-Education (NHE) activities and related aspects was collected through structured schedules from 32 health workers, and 24 school teachers (Appendices I and II). In addition, information was collected by interviewing the following officials and functionaries :

1. District Educational .. 1 From Ahmedabad Officer District
2. Mass Extension and .. 1 From Ahmedabad Education Officer District

3. Medical Officers of Z .. 3 the ICDS	One each from Baroda (urban), Sion(rural) and Chhotaudepur(tribal).
4. Child Development Project Officer of .. 3 the ICDS	One each from Baroda (urban), Sion(rural) and Chhotaudepur(tribal).
5. Anganwadi Workers .. 4	Two from Sion(rural) and One each from Baroda(urban) and Chhotaudepur(tribal). Ahmedabad

Section B : Responses of the beneficiary families regarding their knowledge and practices in health and nutrition were obtained through a household schedule administered to the mothers. Comparison of percentage responses were made in ICDS and non-ICDS areas in the urban, rural and tribal settings (Appendix III).

RESULTS OF THE STUDY

This section will be presented and discussed under the following heads :

Section A : Knowledge and Opinions of :

- I Key officials such as District Education Officer, Mass Extension and Education Officer, Medical Officers, ICDS Child Development Project Officer and others,
- II ICDS Anganwadi Workers
- III Health Workers
- IV School teachers,

— regarding the major nutritional-health problems, health programs and NHE activities in their area of work.

Section B : Responses of Beneficiary Families in relation to NHE in ICDS and Non-ICDS areas.

SECTION A : KNOWLEDGE AND OPINIONS OF KEY HEALTH FUNCTIONARIES REGARDING NUTRITIONAL-HEALTH PROBLEMS, HEALTH PROGRAMS AND NHE ACTIVITIES

I (a) District Education Officer and Mass Extension and Education Officer of Ahmedabad District :

Interviews with these officials revealed that the major occupation of the people in the district was farming with crops like wheat, rice, bengalgram and redgram being grown. Only about a fifth of the population was educated (atleast primary school education) and 70% were stated to be below the poverty line.

Neither of the two officials interviewed could mention the major health problems in the district. According to them, the main aspects covered under the mass education extension program were family planning, agriculture and adult education. The media of communication used were face-to-face discussions, film and slide shows. Shortage of staff and funds were the main constraints mentioned by the officials. There was no provision for evaluating the educational programs, hence their impact could not be assessed from their responses.

(b) Medical Officers : Three medical officers (MOs) of the ICDS, one each from an urban (Baroda), rural (Sinor) and tribal (Chhota-udapur) areas were interviewed. According to the MOs, the main health problems of the tribal and rural areas were tuberculosis, malaria, fever, respiratory tract infections and malnutrition. In addition, the MO of the urban area mentioned skin infections and infective hepatitis as other problems in his area.

The tribal MO opined that main role of the MO was to treat ailments of patients. Besides, the major health programs held at the PHCs were immunization, distribution of iron-folate and Vitamin A, medical check-ups, malaria eradication, tubectomy and vasectomy camps and community awareness programs regarding tuberculosis, leprosy, sanitation and malnutrition. According to him, he received the help of the nurse, the Auxiliary Nurse Midwife (ANM) and the Anganwadi worker in carrying out the above programs which he deemed successful. He agreed that nutrition plays an important role in prevention and treatment of

disease but since the economic status of the tribal families was so poor, there was little scope for NHE to bring about any significant changes in nutritional and health practices of the people. There were no specific NHE activities carried out at the PHC. Informally, whatever NHE was given through the routine programs, was through face-to-face communication.

The rural MO, in contrast, gave negative responses to most questions, namely, none of the programs carried out at the PHC were successful; as the Government gave no authority or power to MOs, their role in health care was restricted; staff of PHC were uncooperative and he could not find time to evaluate any of the programs. NHE, according to him, was no doubt important in curing disease, but there was very little scope for its practical implementation. In this PHC also, no specific NHE activities were carried out.

The urban MO appeared to be more efficient and systematic in his functioning as he mentioned that before any health program was initiated group meetings were held between the MO, the CDPO, Anganwadi Supervisor, ANM and Health Workers. The responsibilities were shared and there was team effort. Communication media used for NHE were charts, film and slide shows, exhibitions etc. Evaluation of the PHC staff was done on the basis of their involvement in the work assigned to them and the community's cooperation extended to them. Regarding the role of nutrition and NHE in disease prevention and treatment the doctors voiced similar feelings as did the other health functionaries - namely, that poverty was the main limiting factor in greatly reducing the effect of NHE programs. Hence, only if economic development programs were undertaken simultaneously could NHE programs be successful.

(c) The Child Development Project Officer (CDPO): Three CDPOs, one each from urban (Baroda), rural (Sionor) and tribal (Chhotaudepur) areas were interviewed. The major health problems mentioned by them were malaria, tuberculosis, leprosy, skin infections, infective hepatitis and anemia. Significantly, none of them mentioned malnutrition as a major public health problem. As regards nutritional -health programs in their charge, the CDPOs listed the various ICDS activities at the Anganwadis, namely, supplementary feeding of children and pregnant & lactating mothers, immunization, referral services, Nutrition-Health-Education (NHE), preschool education and non-formal adult education for women. In contrast to the other ongoing programs, the functionaries of the ICDS, especially the Anganwadi worker (AWW) received special training in NHE from the CDPO, the supervisors, experts and resource persons at various training centres. However, all the CDPO's said that actual implementation of NHE was not very successful and that its impact on the community was not marked. One of the main reasons cited for this observation was that the AWW was overworked and that she spent disproportionately more time on maintaining records and registers.

II The Anganwadi Workers (AWW):

Information on the functions of the AWW and her role in implementing NHE in the ICDS was obtained by interviewing 4 AWWs - two in rural areas (Ahmedabad district) and one each in urban (Baroda) and tribal (Chhotaudepur) areas. The responses of all the AWWs were fairly uniform and are elucidated below.

The functions of the AWW were to carry out the various activities of the Anganwadi(AW) as listed earlier by the CDPO; In addition the AWWs stated that they had to maintain records and registers, prepare and serve the supplementary meal to the beneficiaries, periodically enumerate the target population and make home visits. Two of the 4 AWW did not have any helper. The helpers in the other AW assisted by way of bringing children to the AW, preparing the supplementary food and keeping the AW clean. None of the AWWs interviewed had undergone any NHE training; this is in contrast to what was mentioned by the CDPOs. The AWWs made home visits mainly to deliver antenatal and postnatal care to pregnant and lactating women and to cater to health problems of infants and preschool children. Only one AWW mentioned that she tried to educate the community on oral rehydration therapy for diarrhoea. The main expectation of their supervisors from them was proper record maintenance, and to a lesser extent, the implementation of the activities. All the AWWs interviewed, felt that their workload was excessive and their remuneration meagre.

Observations of investigators on the Anganwadis

In two rural Anganwadis, incorrect record keeping was noted as number of children present were less than number of children marked present in the register. Further, most of the children (more than 75%) at the AW were 3-6 year olds whereas in fact it is the 1-3 year old toddlers who are a more vulnerable group. In this Anganwadi, the main activities were supplementary feeding and some preschool education.

However, the AWWs did impart NHE during their home visits. By way of contrast in the Chhotaudepur tribal AW especially, NHE was well conducted both at the AW and during home visits, accompanied by the use of good audio-visual aids such as charts, models and flannel graph. Community involvement was also evident. The community contributed green leafy vegetables to be incorporated in the food supplement.

The pay-off of a relatively better level of NHE in the tribal AWWs was reflected by better knowledge and practice levels at the community level (refer Section B). This implies that a simplified and imaginative communication system that would focus on the minimum number of global and a minimum number of areas-specific messages that can be implemented by the majority of target households would potentially be the most successful.

III Responses of health workers in rural areas regarding their role in imparting NHE to the community

The Health Worker is a key personnel in spreading NHE to the community which he/she serves. The knowledge, training and motivation of Health Workers would largely determine to what extent is NHE being imparted to people - either in isolation or as an integral part of ongoing health-nutrition programs. Thus, a total of thirty-two rural Health Workers (HW) were interviewed to obtain information on their role in NHE, which is elaborated in the following pages.

On an average each HW catered to a population of 3 to 5 thousand, attending 25-50 patients per day and travelling as much as 10-20 km occasionally to deliver services. Seventy five percent of the HWs

said they had enough time for NHE and 70% also had with them some communication material regarding NHE. These materials were charts, posters and pamphlets. The rest had charts and pamphlets only for family planning education. All the HWs emphasized that they spent an undue amount of time on record keeping as a result of which their time for home visits and more meaningful NHE activities became curtailed. A majority (85%) of HWs found the community people receptive to their NHE messages. However a little over half of them (59%) admitted that the present NHE strategy would not bring about significant changes in health practices of people mainly because of over-riding constraints such as acute poverty of the people, and their faith in traditional beliefs and resistance to change.

The major nutritional and health problems of their area mentioned by the HWs were malaria, respiratory, skin and gastro-intestinal infections, leprosy, tuberculosis and malnutrition. Of these, tuberculosis, malnutrition and anemia could be addressed through NHE, according to 75% of the HW.

As regards the national programs being implemented in their areas, the Special Nutrition Program, the Integrated Child Development Services, and the Mid-Day-Meal Program were mentioned by 59%, 47% and 31% of the HWs respectively. About half (47%) of them said that the Health Sector and the personnel of the above mentioned programs interacted mainly with respect to medical check ups and immunizations for the target population. Other than that, there was little interaction.

As regards content of NHE being imparted by the HWs, a sizeable proportion (59%) knew the critical messages to be passed on about the following conditions: malaria, maternal care, breast

feeding, infant care, anemia, management of diarrhoea, preschool child care, immunization, dietary habits, personal hygiene, environmental sanitation and family planning.

About a third of the HWs (31%) suggested that if they had good audio-visual aids and enough time, then they would be able to play a more effective role in imparting NHE to the community.

In this regard it may be worthwhile to mention that the Department of Foods and Nutrition has developed a Nutrition-Education Kit specifically for the ICDS. The kit consists of a manual with 18 lessons; each lesson is supported by large visuals in black and white. Many of the lessons are also backed by demonstrations. The kit contains 40 visuals, samples of the health inputs, namely Vitamin A syrup, iron folic acid tablets and deworming tablets, anemia detection card, a common household measure for making up ORS alongwith packets of weighed quantities of Salt and Sugar to serve as visual references, and standard measures to show to the mothers, the quantity of foods to be fed to young children.

The strategy is to train the trainer, namely, the CDPO and the Supervisors in the use of the NHE Kit. They in turn would train their AWs through the mechanism of participatory role play. This WHO funded project is in progress (Seshadri and Gopaldas, unpublished).

IV. Responses of the school teachers regarding NHE activities in schools

Altogether 24 teachers - 6 each from urban (Baroda), rural (Shinor) and tribal (Chhotaudepur) areas were interviewed and information on various aspects such as NHE in curriculum, teaching aids available,

the MDM program etc. was obtained. Since the responses of the rural and tribal teachers were very similar, their responses were pooled.

All the urban teachers said that their school curriculum included a few topics related to Nutrition-Health-Education such as balanced diet, personal and environmental hygiene, prevention of air and water pollution, communicable diseases and others. However, of these, the least focus was on nutrition and the most was on hygiene. Only 50% rural and tribal teachers, in contrast, mentioned that NHE component was included in the curriculum, the topics being similar to the ones mentioned. Most of the teachers stressed the need to have teaching aids to impart NHE to their pupils, adding that they did not have enough aids at present. All the teachers agreed that the school child is a potential change agent in bringing about favourable behavioural changes regarding health and nutrition in the families and communities.

Elaborating on the difficulties in imparting NHE to students, 83% and an equal number of rural and tribal teachers claimed that they had enough knowledge regarding NHE but that students were not interested in this topic.

Fifty per cent urban and 67% rural/tribal teachers believed that merely talking about NHE in classrooms would not lead to any change in knowledge or practices of students. Eighty three per cent urban and all rural and tribal teachers said that the course content relating to NHE was not of the right type and needed to undergo several changes if NHE is to be taught meaningfully. All the teachers agreed that occasional talks by medical

and paramedical personnel to the students would be effective in making the students more health conscious. Similarly, it was believed by all the teachers that school children can be trained and encouraged to detect chronic illness and cases of malnutrition in their neighbourhood.

Coughs, colds, fevers and malnutrition were the major health-nutrition problems in school children according to 83% urban and an equal number of rural and tribal teachers. Only 50% urban and none of the rural and tribal teachers were aware of any audio-visual impairments in the students of their class, indicating lack of enough sensitization on part of teachers to such problems in their pupils. The teachers who did detect such impairments brought it to the notice of the parents of the child.

As regards the School Health Programs, all the teachers responded that the only health service at present existing in the schools was an annual medical check up by doctors in the urban schools. In the rural and tribal schools, in addition, the health workers claimed that they visited the schools once or twice a month to assess the health status of children and dispense treatment. However, no health records of children were maintained in 67% of these schools as was done in all the urban schools.

The School Environment and the Mid-Day-Meal Program

The investigators observed that all the schools visited in the urban, rural and tribal areas had enough open space; no crowding of students in classrooms, proper ventilation and

drinking water facilities. However, only 50% urban and 20% rural and tribal schools maintained good classroom cleanliness. Further, though separate toilet facilities were available in urban schools, these were non-existent in all the rural and tribal schools visited.

The MDM program was operating in all the schools studied except in one rural school. It catered to an average of 327 urban and 140 rural or tribal beneficiaries. While 75% of the urban teachers believed that the MDM program has the potential to make the parents and children more health conscious, 67% of rural and tribal teachers held the opposite view.

Majority of the urban teachers (87%) agreed that they, as teachers, can indeed initiate programs on nutrition, health and environmental sanitation for pupils such as poster competition, drama, film shows, slide shows, making audio-visual aids and even teacher training programs. However, paucity of funds, lack of interest on part of other teacher colleagues and lack of authority ("We can do only what superiors tell us") were some of the obstacles mentioned by teachers hampering the actual initiation of NHE programs. In contrast to the urban teachers, all the 100% rural and tribal teachers at the outset said they cannot initiate any such programs in their schools. One reason for this negative attitude may be the fact that these teachers face many more problems in their routine functioning than urban teachers hence they would not be very enthusiastic about taking on fresh responsibilities.

SECTION B : RESPONSES OF BENEFICIARY FAMILIES IN RELATION TO NHE IN ICDS AND NON-ICDS AREAS.

As mentioned earlier, this section reports on the knowledge, beliefs and some selected practices of beneficiary families (who will henceforth be also referred to as 'respondents'). It will also report on their receipt of some health services. Results will be discussed with a focus on selected NHE knowledge and practices in ICDS and non-ICDS study sites. Further, differences if any, between urban, rural and tribal areas, if any, will be elaborated.

Making changes in the diet-knowledge and practices of respondents.

Table 1 shows that many more families (50% vs. 31%) in ICDS as compared to non-ICDS areas were advised by health workers to include green leafy vegetables (GLV) in their children's diets. This was particularly so in the urban and tribal areas. However, only half or less than half the families advised, actually implemented this advice. The exception were the urban respondents as all the families given the advice followed it.

The table further reveals that overall about thrice as many school children in ICDS areas as compared to non-ICDS areas informed parents of nutrition knowledge learnt at school. While a similar trend was seen in the rural and tribal areas, it was not observed in the urban areas, where a third of both ICDS and non-ICDS groups of families learnt of nutrition concepts through their school children. Once again, practice of these concepts was negligible, the exception again being, the urban families.

Table 1. Making changes in the diet - knowledge and practices of respondents.

Items		Percentage Response (N = 470)			
		Urban	Rural	Tribal	Total
1. Health worker advised that GLV should be included in children's diets.	IC*	100	25	98	50
	NIC	40	46	21	31
	T	79	30	60	44
2. Families could actually increase intake of dietary GLV	IC*	100	18	27	24
	NIC	40	31	0	14
	T	79	21	13	20
3. Children informed parents of nutrition knowledge learnt at school.	IC	31	40	19	33
	NIC	29	15	0	11
	T	30	33	9	24
4. Families made changes in diet after receiving child's message	IC	31	1	1	4
	NIC	29	14	0	8
	T	30	4	1	5

* IC = ICDS Block, NIC = Non-ICDS Block, T = Total.

Awareness that tuberculosis, whooping cough and polio are preventable through immunization :

As seen in table 2, level of awareness was slightly higher in ICDS versus non-ICDS respondents. While a similar trend was seen in the rural families, there was no appreciable difference in awareness among the urban and tribal families - in fact level of awareness in tribal families was already very high (90-100%).

Knowledge and Services related to immunization

Knowledge of immunization services was quite high (67 - 75%) (table 3). in both ICDS and non-ICDS areas. Receipt of immunization services was even better (82 - 97%) in both ICDS and non-ICDS areas. In tribal areas especially, there was a 100% utilization of immunization services in both ICDS and non-ICDS areas. In urban areas also similar receipt of services was reported in ICDS and non-ICDS areas, though at slightly lower level (88-89%). In contrast, in the rural areas, ICDS beneficiaries reported a higher level of receipt of services than non-ICDS counterparts: 100% vs 70%).

Personnel, giving immunization services

As table 4 indicates, in both ICDS and non-ICDS areas, the female health worker, (FHW) the Primary Health Centre (PHC) and the hospital were the main functionaries/agencies giving immunization services. Considering the urban/rural/tribal differences, in the urban areas it was the hospital and in the tribal areas it was the FHW who predominantly gave this service. The rural areas, the PHC followed by the FHW gave immunization services. It is to be noted that ^{only} 27% of the rural non-ICDS respondents received ^{the} service. In contrast, all respondents in the ICDS areas reported having received immunization services, indicating a better outreach by the ICDS in

Table 2. Awareness regarding specific disease prevention through immunization

Item		Percentage Response (N = 791)				Total
		Urban	Rural	Tribal		
1. Aware that tuberculosis is preventable through immunization	IC*	62	78	100	79	
	NIC	67	64	79	68	
	T	64	71	90	74	
2. Aware that whooping cough is preventable through immunization	IC	62	78	100	79	
	NIC	62	58	100	69	
	T	62	68	100	74	
3. Aware that polio is preventable through immunization	IC	69	78	100	81	
	NIC	72	63	100	75	
	T	70	70	100	78	

*IC : ICDS Block; NIC : Non-ICDS Block; T = Total.

Table 3. Knowledge and services related to immunization.

Item		Percentage Response (N = 762)			
		Urban	Rural	Tribal	Total
1. Families aware that immunization is necessary for child and have received immunization services.	IC*	69	59	77	66
	NIC	74	60	100	74
	T	72	59	89	70
2. Families not aware but received services	IC	20	41	23	31
	NIC	14	10	0	8
	T	16	26	11	20
3. Families aware but not received services	IC	4	0	0	1
	NIC	4	1	0	2
	T	4	1	0	1
4. Families not aware and not received services	IC	7	0	0	2
	NIC	8	29	0	16
	T	8	14	0	9

*IC : ICDS block, NIC : Non-ICDS block, T = Total.

Table 4. Personnel giving immunization to children and mothers.

Item	Percentage Response (N = 760)				Total.
	Urban	Rural	Tribal		
FHW	IC*	3	27	96	38
	NIC	1	15	100	34
	T	2	22	97	36
PHC	IC	2	72	5	38
	NIC	0	38	0	18
	T	1	55	3	28
Hospital	IC	82	1	0	21
	NIC	90	19	0	32
	T	86	10	0	27
Private Practitioner	IC	1	0	0	0
	NIC	1	0	0	1
	T	1	0	0	0
No Service	IC	7	0	0	2
	NIC	8	27	0	15
	T	8	13	0	8
Others	IC	5	0	0	1
	NIC	0	1	0	0
	T	2	0	0	1

*IC : ICDS Block; NIC: Non-ICDS Block; T = Total

Wastage of Pregnancy

From table 5 it is clear that number of wasted pregnancies (abortion, miscarriages, stillbirths) were much higher in non-ICDS areas vs. ICDS areas: 41% vs. 29%. The trend was similar in urban and tribal ICDS vs. Non-ICDS areas, the difference being particularly striking in the tribal set up - 69% in non-ICDS areas had unsuccessful pregnancies as compared to only 19% in ICDS areas.

Place of Delivery

Table 6 reveals that in ICDS as well as non-ICDS areas, about half the number of deliveries took place in the hospital and half in the home. It is significant that even today, a high proportion of deliveries take place in the home itself; this is particularly the case in the tribal areas.

Person conducting deliveries

Table 7 reveals that the doctor on the one hand and the untrained dai on the other conducted majority of deliveries in ICDS as well as non-ICDS areas. The doctor conducted most of the deliveries in the urban areas while it was the dai who was the sole functionary conducting deliveries in the tribal areas. In the rural areas, the dai, the Auxiliary - Nurse- Midwife (ANM) and the doctor were equally important. It is to be noted that in the rural ICDS areas the services of the ANM for conducting deliveries were availed of by a greater proportion of families than in the non-ICDS areas: 38% vs 6%. The data in the table thus indicates that the traditional midwife (dai) is an important functionary for conducting deliveries and therefore her training for the job is of paramount importance.

Table 5. Wastage of pregnancy (number of children aborted/
still births/miscarried)

Item	Percentage response (N = 762)				Total
	Urban	Rural	Tribal		
Nil					
	IC*	84	59	81	71
	NIC	74	66	31	59
	T	79	62	55	65
1 - 3 Children					
	IC	13	41	18	28
	NIC	24	33	69	40
	T	18	37	44	34
4+ Children					
	IC	3	0	1	1
	NIC	2	1	0	1
	T	3	1	1	1

*IC : ICDS Block; NIC : Non-ICDS Block; T = Total.

Table 6. Place of delivery of child.

Item	Percentage Response (N = 723)				Total
	Urban	Rural	Tribal		
Home	IC*	21	42	100	51
	NIC	25	60	100	58
	T	23	51	100	54
Hospital	IC	79	58	0	49
	NIC	75	37	0	41
	T	77	48	0	45
Others	IC	0	0	0	0
	NIC	0	3	0	1
	T	0	1	0	1

*IC : ICDS block; NIC: Non-ICDS block; T = Total

Table 7. Person conducting deliveries

Item		Percentage Responses (N = 760)			
		Urban	Rural	Tribal	Total
Untrained Dai	IC*	18	37	100	48
	NIC	20	57	100	59
	T	19	47	100	53
Female Health Worker(FHW)	IC	0	0	0	0
	NIC	1	1	0	1
	T	0	0	0	0
Family Member	IC	3	0	0	1
	NIC	4	3	0	2
	T	4	2	0	2
Auxiliary Nurse Midwife(ANM)	IC	0	36	0	18
	NIC	1	8	0	4
	T	0	22	0	11
Doctor	IC	79	27	0	34
	NIC	74	31	0	34
	T	77	29	0	34

* IC : ICDS Block; NIC : Non-ICDS Block; T = Total.

Antenatal Care

The fact that antenatal care was availed of by a greater proportion of ICDS families as compared to non-ICDS families is highlighted in table 8 as only 4% ICDS families vs. 35% non-ICDS families reported of receiving no antenatal care. Antenatal care was availed of mainly through the hospital and PHCs and to a lesser extent, through the dai and the FHW. The hospital, the PHC and the dai respectively were predominantly giving antenatal care in the urban, rural and tribal areas. In each instance, the ICDS areas showed a higher level of antenatal care than the non-ICDS areas. In fact in the tribal and rural areas 'no antenatal care' was reported by as many as 100% and 69% families, respectively.

Knowledge regarding breastmilk and top milk feeding of infants

From table 9, it is apparent that an overwhelming majority of respondents (about 90%) believed that colostrum is harmful for the infants and therefore should be discarded. The trend was similar in both ICDS and non-ICDS ^{urban} rural, tribal and rural areas.

Only about a third of the respondents overall believed that cow's milk should be diluted before feeding it to infants. However the urban/rural/tribal break up showed that as many as two-thirds the ICDS and non-ICDS urban respondents reported that cow's milk should be diluted whereas only 0-6% tribal respondents believed the same. As regards dilution of buffalo milk, majority of respondents in both ICDS and non-ICDS areas held this belief.

It is disconcerting that about half or even more families in the ICDS areas believed that tinned milk or dried milk is better than breast milk and that bottle feeding is better than spoon feeding.

Table 8. Persons giving antenatal care.

Item		Percentage Response (N = 509)			
		Urban	Rural	Tribal	Total
Dai	IC*	10	6	100	9
	NIC	8	13	0	11
	T	9	10	50	10
FWH	IC	4	5	0	4
	NIC	0	20	0	13
	T	2	14	0	9
PHC	IC	1	76	0	44
	NIC	1	19	0	12
	T	1	43	0	26
Hospital	IC	75	12	0	38
	NIC	61	10	0	28
	T	68	10	0	32
Private Practitioner	IC	2	1	0	1
	NIC	1	1	0	1
	T	1	1	0	1
No Care	IC	8	0	0	4
	NIC	29	69	100	35
	T	19	22	50	21

*IC : ICDS block; NIC: Non-ICDS block; T = Total

Note : Some responses were multiple responses hence the percentages in these cases add up to more than 100.

Table 9. Knowledge of respondents regarding breast milk and top milk feeding of infants.

Item	Percentage Response (N = 775)				
	Urban	Rural	Tribal	Total	
1. Colostrum is harmful for the New born.	IC*	86	89	93	89
	NIC	70	94	100	90
	T	78	92	96	89
2. Cow milk should be diluted when given as supplement to infants/children as it causes indigestion	IC	60	22	6	26
	NIC	67	39	0	35
	T	63	30	3	30
3. Buffalo milk should similarly be diluted	IC	67	95	79	85
	NIC	72	61	82	69
	T	70	78	80	77
4. Tinned milk is better than breast milk	IC	19	69	35	49
	NIC	1	6	0	3
	T	11	38	17	27
5. Dried milk is better than breast milk	IC	17	72	33	51
	NIC	24	6	0	9
	T	21	39	17	30
6. Bottle feeding is better than spoon feeding	IC	39	67	72	62
	NIC	28	35	60	40
	T	34	51	66	51
7. Mother should breast feed as long as possible	IC	89	33	46	50
	NIC	84	73	31	65
	T	86	53	38	50
8. Semi-Solid foods should be introduced when infant is 5-6 months old	IC	76	67	54	66
	NIC	60	50	61	55
	T	68	59	58	61

*IC : ICDS block; NIC : Non-ICDS block; T = Total.

Whereas a lesser number of non-ICDS families believed the same. These wrong beliefs were particularly prevalent in the ICDS rural areas.

As regards duration of breast feeding, more than half the respondents were aware that the mother should breast feed her infant as long as possible. There were no appreciable differences between ICDS and non-ICDS responses except again for the rural respondents where, disturbingly, only 33% ICDS respondents vs. 73% non-ICDS respondents said that the mother should breastfeed as long as possible.

A majority of the respondents (more than 50% overall) knew that semi-solid foods should be introduced when the infant is 5-6 months of age; there being not much difference in ICDS and non-ICDS responses.

Beliefs in relation to food and disease

Table 10 indicates that majority respondents in both ICDS and non-ICDS areas held the wrong beliefs that 'feeding curds and oranges lead to the common cold' and 'feeding cooked rice causes liver enlargement' - these responses being appreciably higher in the ICDS areas. These trends were similar in the urban, rural and tribal areas.

The belief that teeth eruption causes diarrhoea was held by almost three-fourths the respondents in both ICDS and non-ICDS areas. In urban and rural settings, fewer ICDS than non-ICDS families held this belief. This belief was much less prevalent in the non-ICDS tribal families.

Table 10. Beliefs of respondents regarding food and disease.

Item		Percentage Response (N = 791)			
		Urban	Rural	Tribal	Total
1. Feeding curds and oranges leads to common cold	IC*	68	99	80	86
	NIC	71	72	54	67
	T	70	86	67	77
2. Feeding cooked rice causes enlargement of liver	IC	25	97	69	72
	NIC	35	47	97	57
	T	30	72	83	64
3. Leafy Vegetables prevent blindness	IC	58	85	57	72
	NIC	58	45	71	55
	T	58	65	64	63
4. Teeth eruption causes diarrhoea	IC	89	71	53	71
	NIC	93	94	29	77
	T	91	83	41	74
5. Child should not be given food, especially liquids during diarrhoea	IC	69	33	38	43
	NIC	66	47	0	40
	T	67	40	19	42

* IC : ICDS Block ; NIC : Non-ICDS block; T = Total.

The extremely harmful belief that children should not be given food, especially liquids, during diarrhoea was held by about half the respondents. It is surprising that many more urban families believed in this practice (about two-thirds) as compared to rural and tribal families (less than half). It is also disconcerting that a third ¹ of the ICDS tribal families held this belief while none of the non-ICDS tribal families held the same.

Beliefs regarding childhood Diseases and treatment

As table 11 elucidates, an overwhelming majority of both ICDS and non-ICDS respondents believed that a child afflicted with mearles should not be taken to the doctor lest the 'goddess' gets angry. As regards importance of aspepsis during delivery of a child, about half the respondents in both ICDS and non-ICDS areas reported that one can use any instrument to cut the naval cord of a newborn as long as it is sharp. This belief was most prevalent in the tribal areas, however it was less in ICDS as compared to non-ICDS tribal families. The least response was from the urban families which is to be expected, as majority got their children delivered at the hospital as has been seen earlier.

The fact that children get fits during high temperature and that sponging a child with a wet, cold cloth brings down temperature was known to more than half the respondents, the response being slightly higher in the non-ICDS areas. Relatively, more tribal than urban or rural families gave this response.

Table 11. Beliefs of respondents regarding childhood diseases and treatment.

Item	Percentage Response (N = 780)				Total
	Urban	Rural	Tribal		
1. If a child with measles is taken to doctor, 'Goddess' will get angry	IC*	92	99	100	98
	NIC	78	95	100	92
	T	85	97	100	95
2. One can use any sharp instrument to cut naval cord of newborn	IC	11	61	65	49
	NIC	10	43	100	49
	T	10	52	82	49
3. Children get fits during high temperature	IC	29	63	61	54
	NIC	41	52	100	61
	T	35	57	80	58
4. Sponging child with wet, cold cloth brings down temperature	IC	62	73	93	78
	NIC	69	79	100	82
	T	65	76	96	79
5. Weak children should not be immunized	IC	41	61	42	51
	NIC	29	22	100	44
	T	35	42	71	47
6. Leprosy is a disease and not a curse of God	IC	2	59	52	45
	NIC	33	39	100	53
	T	19	49	76	49
7. Massaging a baby's abdomen after birth is harmful to the baby	IC	45	57	34	49
	NIC	56	53	100	65
	T	50	55	67	57
8. Iodized salt prevents goitre	IC	3	14	0	8
	NIC	1	9	0	5
	T	2	12	0	6

*IC = ICDS block; NIC : Non-ICDS block; T = Total.

The mistaken belief that weak children should not be immunized has held by about half the respondents. Once again, it is disturbing that this belief was more prevalent in the ICDS as compared to non-ICDS areas. The only exception were the tribal families where 100% non-ICDS vs. 42% ICDS families reported that weak children should not be immunized.

The fact that leprosy is a disease and not a curse of god was known to about half the respondents. Again the families in ICDS areas did not respond as well as the non-ICDS families except for those in the rural areas. Similar trends were seen with regard to awareness that massaging a baby's abdomen after birth is harmful to the baby.

Very few respondents, in both ICDS and non-ICDS areas, knew that iodized salt prevents goitre. This is perhaps because goitre is not a public health problem in Gujarat hence awareness regarding this disease was low.

DISCUSSION AND CONCLUSIONS

For any NHE program to succeed, three stages are necessary. The first stage is an understanding by the population of the change to be induced. The second stage is an acceptance by the population that such a change is desirable, and beneficial to them. And the last stage is putting the change into practice (McNaughton and Davey., 1976). In the present study, the small quantum of NHE delivered in some of the on-going nutrition and health program and in the schools and health centres has not made much of a dent in bringing about desired changes ~~in~~ ⁱⁿ health practices of the beneficiaries. This suggests that the complete or partial absence of the three stages listed above may be partly responsible for the existing situation.

Firstly, for an adequate understanding and acceptance by the community of the changes to be induced, full involvement, enthusiasm and proper training of the change agents(the health and education personnel) is required. This was not observed in the present study. Interviews of the various personnel responsible for imparting NHE (Section A) revealed that :

- the higher level officials did not accord a high priority to NHE and were not sufficiently oriented to the importance and 'know-how' regarding NHE;
- Almost all the personnel interviewed acknowledged that NHE was needed to bring about and maintain good health but were sceptical about its practicability in the face of overriding poverty of the people and their tenacious hold onto traditional beliefs;

- most of the personnel had not received adequate training in content and communication strategies in NHE;
- the field level workers faced several day-to-day problems in imparting NHE such as lack of audio-visual aids and lack of enough time. For example, the key functionary of ICDS, the AWW, spent an undue amount of time in maintaining records of beneficiaries.

Similar findings have been reported by the Planning Evaluation Organisation (PEO, 1981). The PEO report states that the AWW hardly devoted anytime to NHE as she was so overloaded with the pre-primary education component of the ICDS and with the maintenance of numerous records and registers. Further, according to USAID-INDIA (1983), the training of AWW in communication techniques, organization of group meetings and the treatment-prevention of most common health and nutritional problems needs to be strengthened. In the same paper, it was also observed that the participation by the supervisory (Mukhyasevika and CDPO) and medical (the Medical Officer) staff in NHE has been limited due to their perceived role as supervisors and not educators, and their limited contact with the AWW. It may be recalled that the present AWW, interviewed in this study said that their superiors mainly expected them to maintain registers and other records properly and did not provide much guidance and help on implementation of ICDS activities.

Training the trainers and implementers of the Special Nutrition Program in Baroda also revealed that these key personnel had never received any training in NHE. Further, whatever NHE knowledge they possessed was disturbingly erroneous (Gopaldas et al, 1983). The need to disseminate timely and relevant program

information and NHE to the implementers of the Applied Nutrition Program (ANP) has likewise been highlighted by Srikantia (1980).

The main message that emerges out of Section A is that the need of the hour is to first train the trainers of NHE by the use of simple kits and participatory role play.

Next to the trainers, the implementors—the CDPO, the supervisors, the AWWs and helpers of the ICDS; the doctors, the LHV, ANMs and HWs of the national health programs; the trained and untrained dais, the primary school teachers – need to be trained in the same NHE content and strategy as used for the trainers in the training institutions.

Only when the above are achieved and there is good orchestration of the minimum number of the most important messages, should NHE go to the community.

Section B of this report further revealed that by and large there were no marked differences in NHE knowledge between beneficiary families covered by ICDS vis-a-vis non-ICDS counterparts in selected urban, rural and tribal areas.

However, in certain respects, the percentage of correct responses and/or the practice of certain NHE messages was noted to be higher in ICDS study sites vs. their non-ICDS counterparts. For example a higher number of respondent families had availed of immunization services in the ICDS study sites than in the non-ICDS areas. There appears to be a need to widely disseminate information on the specific protective role of each type of immunization. Although levels of knowledge and awareness were high in both ICDS and non-ICDS (it being higher in the ICDS areas), yet, awareness has not reached universal levels.

Another notable difference observed in the ICDS areas was the reduction in the number of wasted pregnancies (abortions/miscarriages, still births). This was substantiated by less deliveries by untrained dais, better availability of ante-natal services, more deliveries being conducted by the ANM or doctor in the ICDS vs. the non-ICDS area. However, the fact that overall, the untrained dai still attends over half the births, it is imperative that ante and post natal care, hygienic deliveries as well as a well-conceived package of NHE be given to this functionary on a priority basis. Further, it may be worthwhile to pursue the idea of a hygienic 'laying-in' hut per village which will be available to all practising dais of the village.

Another positive aspect observed was that there was an increase level of awareness amongst the ICDS respondents regarding the role of green leafy vegetables(GLV) in preventing blindness than amongst the non-ICDS families. One reason for this may be that NHE messages regarding GLV were conveyed to a higher number of ICDS families by the health workers and school going children, as noted earlier.

Amongst the urban, rural and tribal areas, the tribal ICDS respondents on the whole tended to give more positive responses than the non-ICDS counterparts. This can be explained by the fact that the Chhotaudepur ICDS block(the selected tribal area) has been ranked as one of the best ICDS blocks in Gujarat. Further, a NHE project for the tribal primary school child was undertaken by this department for the past five years(Nutrition Foundation of India, 1984). The Chhotaudepur example typifies what fairly relevant NHE can achieve.

Summing up, the positive gains in awareness and practice were most evident with regard to almost universal acceptance of immunizations and better use of trained personnel for the conduct of deliveries in the ICDS vs. non-ICDS areas.

Coming to the negative points it was disturbing to note that there were strongly held beliefs detrimental to good nutrition and health in both ICDS and non-ICDS areas. Not only that, there were many instances of misinformation or totally wrong information reaching the community. To elaborate, there was a very strongly held belief in both ICDS and non-ICDS areas that colostrum was harmful for the newborn. It was consequently discarded. There is therefore, an urgent need to address this wrong notion through NHE. It is not sufficient to just say 'colostrum is good for your baby'; something stronger such as 'did you know that during the first two days milk is full of medicine to protect the newborn from diarrhoea, fever, coughs and colds? That is why it looks different from normal mother's milk. If you do not give it to the baby you are throwing away good medicine'. There is concomittant need to promote giving the baby clean boiled water in the first 2-3 days of his life and to openly declare war on the noxious "janamguttis" (herbal concoctions) fed to the infant. It is also necessary to downgrade the practice of using any old rag or cotton wool to feed the janamgutti and to promote use of clean cup and spoon.

There were strong sources of misinformation regarding the use of commercial baby milk formulas, powdered milk and bottle feeding. The ICDS sites showed predominantly higher responses in favour of commercial milk and the bottle vs the non-ICDS sites. This appears to show that the ICDS functionaries either received wrong information

during their training, or are disseminating these very wrong pieces of information to the community on their own.

No information is preferable to wrong information dissemination. Relevant education should start with setting right the NHE notions of the ICDS implementers, in the first instance.

With regard to the concept of breast feeding as long as possible, there is again an indication of misinformation by the ICDS AWWs, as more non-ICDS respondents stated that 'breast milk feeding should be continued as long as possible'. The degree of misinformation was strongest in the rural areas. It is possible that the basic message of 'introduce semi-solids at 6 months of age' has been confused by the AWW to mean 'stop breast feeding at 6 months of age'. This aspect needs more probing. Relevant NHE needs to emphasize 'breast feeding as long as possible alongwith adequate semi-solid feeding' from 6 months of age.

The fact that about two thirds the respondents stated that semi-solids should be started in an infant's diet at 5-6 months of age, does not mean much as several concurrent ongoing studies in our department are indicating that the amount fed are microscopic. Therefore, relevant NHE would mean demonstrating the fact that an infant can consume a much larger quantum of semi-solid food than his mother believes him capable of doing.

Other wrong beliefs held by majority of respondents (more so in the ICDS areas) like feeding curds/oranges and rice leads to colds and liver enlargement respectively, need to be looked into and corrected as these would have repercussions on weaning of the young child, especially as rice is an item which is relatively cheap and widely consumed.

The widely held mistaken belief that teeth eruption causes diarrhoea would perhaps be a difficult one to address in the community; one reason being that teething takes place right from 6 months onwards to two-plus years and therefore several episodes of diarrhoea and teething go hand-in-hand and are strongly associated in the people's minds with one another. Therefore, a suitable approach would be to widely disseminate through NHE other more important causes of diarrhoea such as poor personal hygiene, unclean food and water etc. as well as prompt treatment once diarrhoea occurs.

A disconcerting belief that also emerges from the results is that about half the respondents (more so in the ICDS urban and ICDS tribal areas) believed in withholding food/liquids during diarrhoea. This is an extremely harmful practice and correct information as regards oral rehydration needs to be urgently disseminated especially through the ICDS AWW wherever this belief is held. Messages like 'your child is losing water through his stools so he will dry up if you do not give plenty of water and semi-liquid foods' may be spread through NHE.

The fact that half the respondents did not realize the importance of asepsis during delivery of a child (i.e. one can use any sharp instrument to cut the naval cord of a newborn) again emphasizes the need for job-specific training of the traditional midwife (dai).

Some beliefs which are strongly held by the community such as 'a child with measles should not be taken to the doctor' or 'leprosy is a curse of god' (in the tribal ICDS areas) need not be confronted but rather the NHE should focus on 'what should be done

in such a situation'. For example, 'continue to give soft food and liquids to a child with measles at home itself', immunize a child so that he does not get measles at all(if measles vaccine is available) 'take a child to the doctor soon after he has recovered' (since measles is often followed by respiratory infections, malnutrition etc.)

In an ongoing study in this department (Sashadri and Gopaldas, unpublished), it has similarly been observed that some urban AWWs were disseminating irrelevant or undesirable messages such as 'do not breast feed beyond 5 months' or 'feed a malnourished (Grade II) child more green leafy vegetables'. Such situations could arise out of a lack of orchestration on the part of the trainners, where messages are given without emphasizing the 'why' of it.

From the foregoing discussion on the lacunae in the present NHE strategy as observed in the sampled areas of the present study, one comes to the final objective of this study, namely 'What can be done to improve the present situation ?' The following are our suggestions :

1. Proper orientation and training as regards NHE should be given to all levels of personnel implementing the ongoing nutritional-health programs with special emphasis on communication techniques and mass media approach.
2. The job descriptions of key personnel such as AWWs should be suitably modified so as to enable them to have enough time for NHE and community contacts. They should also be provided with enough audio-visual aids and transport to impart NHE.

3. Merely having a list of basic NHE messages is not enough. Implementing authorities should develop a comprehensive NHE strategy including communication techniques, detailed instructions to beneficiaries on how to implement the messages in the face of socio-economic and cultural constraints and amongst the messages, giving priority to immediately implementable ones so as to enhance the credibility of the AWW and other functionaries giving NHE.
4. Finally, in achieving short term benefits, the long-term goal, in fact the only one which will really enhance the impact of NHE - should not be forgotten. That is, along with NHE, there have to be simultaneous efforts to raise economic levels, improve environmental sanitation, reduce morbidity from infections and adopting small family norms. In short, NHE should be a part of a development package.

Report on "Study of the Current Status and relevance of community nutrition and health education programmes through the health care system and schools and identification of practical steps for improving their efficiency" in Delhi

All the efforts made to increase food production have yet not been able to help in overcoming the problems of malnutrition. High rates of malnutrition, morbidity and mortality resulting in functional disabilities act as a big handicap in the country's developmental plans. The root causes of malnutrition need to be tackled through both intervention and educational measures. The intervention programmes offer an immediate but temporary relief while educational efforts will lead to longer lasting impact.

It is only in the Seventh Five Year Plan that the Government of India has laid ample emphasis on educational measures including NH Education, especially to the underprivileged masses, through various developmental programmes.

The present study, therefore, has been conducted:

- (a) to find out the current status of nutrition and health education component of the health system (particularly with Health Guide Scheme), Integrated Child Development Programme (ICDS) and Primary school education;
- (b) to assess the impact of various services and inputs on the beneficiaries;
- and (c) to suggest ways and means of improving NH Education through these systems.

The study has been conducted in rural and urban blocks/projects in the Union Territory of Delhi covering a total of 493 households under the following categories:

- (a) Block with HG Scheme covering 131 households, referred as 'HG group',
- (b) Projects with AWW scheme, covering 221 households 'AWW group'.
- (c) Block with HG and AWW Schemes covering 60 households 'HG+AWW group'.
- (d) Block without HG or AWW Scheme, covering 81 households 'Non HG/AWW group'.

The results of the study indicate that much of the Education is not being imparted by the Health Guides or the primary school teachers due to varied reasons. However, it was noted that the Anganwadi Workers were imparting some education to pre-school children and women on aspects related to nutrition and health.

To find out the impact of the programmes/services provided, the study has been directed to assess the knowledge, attitudes and practices (KAP) of the population, relating to various parameters of NH Education. The responses gathered through open-ended questions throw light on the prevalent practices alongwith the reasons. Through grading and subsequent composite scoring of the responses (from 0 to 100, ^{from 0 to 100, the slightly up-graded marks}), KAP of different groups has been compared. In this study, it was not aimed to place these schemes at par for comparison but to assess the current status of these programmes and their impact on the targeted population.

Through the composite scoring system and subsequent categorisation of the scores (by equi-division of the range), a method has been developed for assessing KAP of the population.

The impact of various independent variables on the KAP has also been studied. Since socio-economic status is an important variable, particularly in KAP studies, methodology has been evolved for developing a composite socio-economic status index for the household. It accounts for the socio-economic factors attributed to all members of the household rather than an important individual member.

The study reveals a wide gap still existing between the present practices and the desired KAP of the population. In most of the nutrition and health related practices, traditional ways are yet being followed perhaps due to lack of awareness or unwillingness of the people to change. For modifying the behaviour and practices of the population it is of utmost importance that the educators study their socio-cultural practices before suggesting any relevant change.

It further reveals that there is a need to strengthen the nutrition/health education component in all the groups (of study) to improve their knowledge, attitude and practices.

On the whole, 'AWW group' ranked the highest with regard to their KAP relating to most of the MII Education parameters under study (such as immunization, cooking

practices, infant and child feeding practices and those related to care of children in common ailments). This group was followed by 'HIG group', 'Non HIG/AWW group' and 'HIG+AWW group'.

While it is expected that the 'HIG+AWW group' should have gained the highest position, its poor performance can be attributed to many factors including NGOs having not been in existence for sufficient length of time, poor functional performance or supervision by both the sectors and their lack of coordination. Apart from this, lower educational status of the respondents may also have played its role.

In view of limitations of sampling in respect of 'HIG+AWW group' which we have ^{been} ~~already~~ referred ^{elsewhere} to, generalisations need to be made with caution. Statistics apart, on the basis of our field work, some of the policy implications are being discussed.

The study suggests that more emphasis needs to be laid on the nutrition health education component during training of the functionaries at all levels, the grass-root workers in particular, so that they do not neglect this vital service. Periodic re-orientation courses in BH education should be organised for the functionaries for strengthening their knowledge and abilities especially to tackle the problems arising during their work in the field.

Some re-orientation courses should also be organised in the field, for varied categories of workers from different sectors (like health, ICDS, education, Agriculture, extension etc.) so as to generate a coordinated approach for tackling the problems in an effective manner.

Nutrition/health education needs to be given due importance in programme implementation and supervision. Constant monitoring and concurrent evaluation of the NH Education activities need to be built into the programme at the time of planning itself. Provision should also be made for periodic independent or external evaluations to get a true picture of the situation. It is important to involve the community in programme evaluation right from the beginning so that the NH Education activities can be made need based, within their socio-cultural pattern and economic reach.

While all opportunities and the channels of imparting NH Education should be exploited to their fullest extent, care should be taken to maintain consistency in the messages conveyed. Thus, a close coordination and interaction is required to be maintained among the functionaries of different sectors including the mass media.

The study indicates that the following aspects particularly need to be emphasised in our NH Education programmes/activities:

- Proper infant feeding and child rearing practices especially the ones relating to colostrum feeding, supplementary feeding and weaning.

Since colostrum is often being discarded as the milk unfit for the baby, mothers should be made aware of its high nutritional value and anti-infection properties so that they can modify their prevalent practices. Similarly, the need for introducing supplements in the infants diet by about six months of age require special emphasis.

- Significance of regular growth monitoring and the knowledge regarding nutritional ailments needs to be particularly emphasised so that timely action can be taken by the family to avert any serious loss.
- Care of infants and children in common ailments like diarrhoea, dysentery, fever, measles, chicken pox, respiratory infections. Proper care and practices, if followed, can help in compensating the losses to a great extent and thus restoring health of the sick child. It will not only result in faster recovery but also decrease the morbidity and mortality.

Special emphasis needs to be laid on oral rehydration of infants and children suffering from diarrhoea/dysentery. During fevers and infections, very often feeding of the sick child is curtailed or withheld. The community, therefore, needs to be made aware of the importance of continuing feeding of the sick along with the ways to accomplish the same. In the case of children suffering from measles and chicken pox, maintenance of personal hygiene and sanitation particularly needs to be emphasised.

- Practices relating to immunization of infants and children. Timely immunization helps infants and children to acquire immunity against a number of dreadful diseases. This not only reduces morbidity and mortality but also helps in unhindered growth and development of the child.

Therefore, our masses should be made aware of the significance of immunization, which immunizations need to be given, when and why. Alongwith this they should also be made aware of the after effects, if any.

It has been observed that very often our functionaries vaccinate the children without making the people aware of their significance or the after effects. In such cases, occurrence of fever etc. after vaccination, many a time leads to the loss of faith (of the community), in immunization which may be a great set back to this programme. Therefore, the concept of fever etc. should be explained in such a way that they may accept it as a natural phenomenon. Further, as a result of proper education, the community should be made to come forward for immunization on their own rather than being compelled. However, adequate facilities need to be provided for storage, transportation and immunization to maintain potency of the vaccines.

- Practices relating to maternal nutrition especially during pregnancy and lactation. Correct practices, if followed, help in building adequate maternal stores as a result of which the intra and extrauterine growth and development of the child is improved.

It has been observed that in our Indian homes, very often women give least importance to their own dietaries and tend to eat what is left. No care is given to the increased nutritional needs imposed by pregnancy and lactation rather social taboos and customs may further curtail their intake. Therefore, they need to be made aware so as to modify the nutritionally unsound practices.

- Improved methods of cooking, processing and storage of food where proper storage and efficient utilization of food should be emphasised for increasing the net availability of food. For this, practical suggestions need to be drawn up on the basis of prevalent socio-cultural practices.
- Proper hygiene and sanitation especially the maintenance of cleanliness while preparing, handling and serving food particularly while feeding infants and young children; and

- Small family norms be generated for better health of mother and child.

For imparting these messages, novel and simple techniques of NH Education need to be evolved for a long lasting impact.

The study revealed that the KAP related to most of the above parameters of NH Education is significantly correlated with respondent's educational status. Therefore, the mothers and the future mothers (at present the young girls) specifically need to be imparted this education effectively. In this connection the 'Copajan Plan' proposed for education and training of the rural girls and young women, with an underlying aim of delayed marriage, postponed motherhood, child spacing and curbing the family size, needs an immediate implementation, atleast on experimental basis. The plan proposes education of young illiterate girls through practical training on various aspects relating to NH Education along with some other important ones.

Home science colleges, which are well equipped for such an education should be entrusted with the implementation and evaluation of these programmes. Such programmes will not only prove cost effective in the long-run but also result in ever lasting improvements.

It is proposed that for groups of community members, comprising of 15-25 persons, short courses in NH Education should be organised with the help of corporative field

This strategy could be implemented first on experimental basis and then expanded to cover the entire population. In this context, the strategy of 'each one-teach one' can also be tried out and the community members once trained could be made responsible for modifying the attitudes of their fellow residents. Home Science graduates who are well versed with nutrition and health knowledge need to be employed as Nutrition Health Educators under programmes like ICDS so as to carry out NH Education.

In view of the huge amounts being spent annually on various aspects of the programmes it would be advisable to have proper building, facilities and surroundings of the delivery centres like Anganwadis so that these become the temples of learning good living habits for all.

While all channels need to be utilized for imparting effective NH Education, different sets of community could be approached through the functionaries of various programmes playing major role in their day to day activities e.g. a farmer through agriculture extension worker, a child through teacher, a mother through the health worker and so on. These functionaries acting as catalytic agents could pave way for the NH Educators for effective communication.

Attempts should be made to make our programmes the people's programmes through their participation and contribution. The CRS model of nominal fee and training

in NII Education for graduating the participants (usually mothers) to utilize the services rather than being a passive recipient needs to be implemented. The services provided free of cost, may not be always effective while the ones purchased, though at subsidized rates, usually make the beneficiary look for the gains to get the maximum return of his money and thus it will increase his involvement.

Training of the functionaries at all levels needs to be critically looked into. Those involved in the planning, organisation and implementation of the programme should also be imparted required training and orientation about the programme particularly NII Education so that they may be able to evaluate the work in qualitative terms too rather than quantitatively. The training of CDPDs, supervisors and other such supervisory and middle level functionaries needs to be strengthened so that they may serve as trainers for continuing education of grass root level workers like Anganwadi Workers and Helpers.

The Helpers need to be given atleast a 3 days training in groups of 20-25. Their Training curriculum should particularly include the following aspects with emphasis on NII Education.

- Importance of cleanliness, personal hygiene and environmental sanitation.
- Proper methods of cooking especially for conservation and enhancement of nutritive content of food.

Periodic medical check up and immunization of the Helpers is also advocated.

Though our study shows that 'HICLAWW group' has not fared well, it does not indicate that there is something wrong with the system. Perhaps the solution lies in strengthening the institution of Health Guides through better training and respectable honorarium.

As a matter of fact in view of the prevalent socio-cultural practices we would advocate a team approach and the best team would be that of a husband and wife selected from the village itself. If, however, this is not possible, a Male Health Guide and a Female Anganwadi Worker may be a better combination. In such cases, a close coordination and mutual support along-with proper supervision become imperative for effectiveness of the programme.

Importance of self reliance cannot be over emphasised. In this context, we propose a model to involve the community for effective nutrition education.

Its first requirement will be to define clearly the objectives to be achieved within a stipulated time frame. The operation area needs to be divided into pre-intensive, intensive and post-intensive zones. Considering the five year plan period, this model proposes two years of pre-intensive work in pre-intensive zone of the project area. During this phase, AWs could be established and the services like Supplementary Nutrition, Immunization, Health Checkups, non-formal pre-school education etc.

could be provided along with establishment of the rapport with the population.

This work would pave way for intensification of the programme in terms of NHE Education during the second phase consisting of next two years. During this phase, ample emphasis needs to be given on NHE Education, and immediate needs of the population. Courses in NHE Education need to be organised for the community at various levels making them self-understanding and self-reliant. It is expected that the people after this crash programme in NHE Education will be able to realize their problems, find their own solutions and work for them. Yet after intensive working

with the community, leaving them abruptly may force some of them to go back to their previous ways and styles.

Pre-
intensive
zone

Intensive
zone

Post-
intensive
zone

Therefore, a continuous reinforcement of the ideas with constant monitoring and evaluation shall help in sustaining the change for a long lasting impact. This post-intensive phase could continue for a year. Thus, after a five year span the project should become self operating primarily with the community support.

The work in the rest of the project area could be organized in such a way that the intensive, pre and

post intensive work could go on simultaneously and the functionaries could keep a watch on pre and post intensive areas while concentrating their most of the efforts on intensive zone.

It is envisaged that through NII Education, RAP of the masses can be modified resulting in the adoption of improved practices which in turn can ensure their improved health status and better quality of life.

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APPENDIX - I

NUTRITION FOUNDATION OF INDIA

Project : Study of the Current status and relevance of Community nutrition and health education programming through the health care system and school system.

HEALTH WORKER SCHEDULE

Identification No. _____

A. Identification :

1. Name	4. P.H.C.
2. Designation	5. Subcentre
3. Sex	6. Age in years

B. Training

7. Educational Qualification :	
8. Any in Service	9. Duration :

Brief account related to content and activity of N.H.E. component of training in service.

10. Since how long are you in service :

11. Since how long are you in this area ?

C. Availability :

12. How much is your population coverage ?

Intensive zone _____

Twilight Zone _____

13. The farthest point you travel to provide the services Distance _____

14. Do you stay in the sub-centre/village? Yes/No _____

15. Do you visit all houses in a village or only those houses with pregnant/nursing mothers and pre-school children? Yes/No

16. How do you prepare your home visiting work schedule ? (Please illustrate)

17. For how many days in a week are you available at your sub-centre ?

18. For how many hours are you available at your sub centre ?

19. At what frequency does the M.O.(PHC) come to sub-centre to conduct to clinic

20. How many patients do you attend per day ? (Cross check with recent one month data from the records).

D. INTERVENTION

21. Do you get enough time to talk to the community regarding NHE ? Yes / No

22. Do you carry relevant communication material with you ? Yes/No
If No, Why ?

23. Do you think that you are spending unduly more time in record keeping ? Yes / No

24. When you talk to the community about NHE what is your general impression about their reaction ?
Many of them receptive/Non-receptive/Indifferent.

25. Do you think that your talking alone could bring in favourable changes in health and nutrition practices ?

26. Are you convinced that the education you impart is practical to implement under local conditions ? Yes / No

27. What are the major local health and nutritional problems ?

28. Out of these, which problems can be tackled through nutrition and health education ?

29. The present NHE strategy has not been able to make dent on health practice, Do you Agree ? Yes / No

30. If no, what are the perceptible changes in health and nutrition practice you have come across in the community over few years ?

31. If yes, what are the constraints on the part of the communication system and the community ?

Communication system

Community :

32. Are there any other community develop^{ment} programmes with a component of nutrition and health education in your area ? Yes / No

Please specify the details _____

33. If yes, what type of interaction is present between health programmes and other programmes in operation ?

34. What are the critical messages you pass on about the following issues :

- a. Malaria
- b. Maternal Care
- c. Breast Feeding
- d. Infant Care

- Anemia
- Management of diarrhoea cases
- e. Pre-school child care :
- f. Immunization
- g. Dietary habits
- h. Personal Hygiene
- i. Environmental Sanitation
- j. Family Planning
- k. Any other (Specify)

25. What are your practical suggestion for implementation ?

Name of the Investigator : _____

TIME : _____

Date : _____

APPENDIX - II

NUTRITION FOUNDATION OF INDIA

PROJECT : Study of the Current status and relevance of community nutrition and health education program through the health care system and school system.

SCHOOL TEACHER SCHEDULE

I. Identification:

Name of the teacher

Name of the School :

Administration :

Village :

Age : Years

Sex : Male/Female

Religion :

Caste :

Educational Qualification

Any in-service training related to NHE

II. HEALTH AND NUTRITION EDUCATION ACTIVITIES :

1. How many students are there in your Class ?
2. What are the subjects do you teach ?
3. From the ~~curric~~ curriculum prescribed, including class books and other extra circular activities did you find any topics related to NHE ? Yes / No
4. What are the brief contents of the topics ?
5. Do you think there is a need to have teaching aids to teach NHE in a more effective way ? Yes / No
6. Are you having enough teaching aids at present for this purpose ?

None / Enough / in need of more.

7. It is believed that school going child is a potential change agent to bring in health behavioural changes in the family.

Do you agree ?

Yes / No

8. Regarding the difficulties in imparting health education to the students do you agree with the following statements ?

Yes No

- a. I do have enough knowledge
- b. Students are not interested
- c. Classroom talking would not lead to any change
- d. Course content is not of right type
- e. A talk given by the medical and para medical personnel will make the students more health conscious.
- f. Students can be encouraged to identify chronic illness in the neighbourhood.

9. What are the main health problems in the area ?

10. What are the main health problems among the students in your class ?

11. Did you notice any student with audio and or visual impairment in the class ?

12. As a teacher, do you think you could do something to them ?

Yes / No.

13. Did you bring this to the notice of their parents/ health workers ?

Yes No If no why ?

Parents

Health worker

14. Do the medical officer/health workers visit your school ?

Yes / No

15. Do you know the purpose of their visit ?

Yes / No

If yes, please specify the purpose _____

16. How often do they visit ?

Per month

Medical Officer

Health Workers

17. Do they conduct health check up of school children ?

Yes / No.

18. If yes, how often ?

19. Do you maintain any health record of the children in your class ?

Yes / No

III. SCHOOL ENVIRONMENT :

1. Investigator is to make a personal round of the classroom and school to ascertain the conditions of environmental sanitation and fill up the following check list.

- a. School having enough open space Yes / No
- b. Cleanliness in the Class Poor/Fair/Good
- c. The classrooms are crowded. Yes/No
- d. Proper ventilation in the class Yes/No
- e. Drinking water facility maintained hygienically Yes/No
- f. Separate toilet Yes/No

IV. FEEDING PROGRAMME IN SCHOOL :

1. Is there any supplementary feeding programme in operation in the school ? Yes / No
2. How many beneficiary are there at present ?
3. Since how long the programme is in operation ?
4. Do you think that such programme would help the parents and child to become more health conscious ? Yes / No
5. Do you think that you can initiate some action programme in the school about nutrition and health education and environmental sanitation ? Yes / No

If yes, please elaborate _____

If no, what are the limitations ? _____

6. In order to initiate action programme do you need some additional inputs ? Yes / No

If yes, What are they ? _____

Name of the Investigator _____

time _____

Date _____

APPENDIX - III

NUTRITION FOUNDATION OF INDIA
HOUSEHOLD SCHEDULE

PROJECT : Study of the current status and relevance of community nutrition and health education programmes through the health care system and school system.

Household No. i

DEMOGRAPHY, SOCIOECONOMIC DATA:

Name of Head of Household :

House No, Street &
Location :

Research Centre

Duration of residence
in the present area :

Village i

Religion
Caste/Community

1. DEMOGRAPHY, SOCIOECONOMIC DATA

NOTES * N = Never Married ; M = Currently Married
 W = Widow/Widower ; D = Divorce ;
 S = Separated.
 ** IL = Illiterate ; L = Literate
 *** Never gone to school S = Schooled, year
 1, 2, 3, ...

NUTRITION EDUCATION INTERVENTION :

1. During their contacts, did the health workers give you any advice about the diets of the children and mothers Yes/No
2. If Yes, what was the advice ?
3. Did they talk to you about the necessity of pregnant/nursing women having better diet in terms of quality and quantity ? Yes/No
4. If yes, what was the specific advice ?
5. Are you convinced that the nutrition education message passed on to you are practical ?
Yes / No / Don't understand/Indifferent.
6. If you are convinced, where you able to put the advice in to practice ? Yes/No
7. If yes, please substantiate.
8. If no, what are the reasons for not implementing them ?
Not able to change the daily routine/the foodstuffs are not locally available/family members do not like/elderly member of the family objects to the change/those food stuffs are expensive/any other(Specify).
9. Did their advice lead to any change in the diet of pregnant/nursing mothers in your family ? Yes / No
10. If yes, what was the change ? (Please substantiate)
11. Did the health workers advise you to include green leafy vegetables in your children's diet ? Yes / No
12. If yes, were you able to include them more than before ? Yes/No

/ 3 /

Did your children inform you that they were taught about nutrition in their schools ?

Yes/No/Not applicable.

On the basis of your child's message, (this Nutrition Education) did you attempt at any time to modify your family diet ?

Yes / No

If yes, how did you do ?

MATERNAL AND HEALTH CARE PRACTICE :

1. No.of pregnancies the mother had ?

2. No.of children born alive to mother

Boys _____ Girls _____

3. Children of mother alive at present :

Boys _____ Girls _____

4. Place of delivery (last or expected) child.

Home/Hospital/Not Applicable/Others.

5. Delivery conducted by :

Family members/Dai/ANM/Doctor/Not applicable/Other(Specify)

6. From whom did you get the ante-natal care ?

Dai/Female Health Worker/PHC/Hospital/Private Practitioners/
No care/Others.

7. Was the care regular ? Yes / No

8. From whom did you get the immunization and propbylaxis services for your child ?

Female Health Worker/PHC/Hospital/Private
Practitioners/No Service/Others.

9. Are you aware that this care should be given to your child ? Yes / No

10. If yes, in what way would it help the child ?

11. Did you get the immunization and propbylaxis services to your youngest child ? Yes / No

12. Did you face any difficulty in getting these services ? Yes / No

13. What was the difficulty ? (Please specify)

VI. HEALTH AND NUTRITION EDUCATION KNOWLEDGE SCORES :

1. Breast milk during the first few days after delivery is pale and pungent ; hence harmful to the baby.
True/False/Do not know
2. Cow/Buffalo milk should be diluted when given as supplement to the infants/children as it causes indigestion.
Cow : True/False/Do not know
Buffalo: True/False/Do not know.
3. Tinned/Dried milk is better than breast milk
Tinned : True/False/Do not know
Dried : True/False/Do not know.
4. Feeding babies in bottles is a good practice than feeding with a spoon.
True/False/Do not know.
5. Feeding of plantains, curds and oranges causes constipation in young children and infants.
True/False/Do not know
6. If you feed cooked rice to an infant, it will cause enlargement of liver.
True/False/Do not know.
7. Inclusion of green leafy vegetables in food can prevent blindness in children.
True/False/Do not know
8. Teeth eruption causes diarrhoea in children
True/False/Do not know.
9. When a child is suffering from measles, it should not be taken to a doctor as the "Goddess" will get angry ?
True/False/Do not know.
10. The following diseases can be prevented by immunization :
 - a) T.B. True/False/Do not know
 - b) Whooping Cough : True/False/Do not know
 - c) Polio : True/False/Do not know.

/ 5 / 11

To stop a child having loose motions, it should not be given food, especially liquids.

True/False/Do not know

One can use any instrument available to cut the navel cord of the new born, provided it is sharp.

True/False/Do not know

Children get fits when they get high temperatures.

True/False/Do not know

Covering the body with wet clothes when the child is having a high temperature is advisable.

True/False/Do not know

Weak children should not be given immunization.

True/False/Do not know

• Breast Feed as long as possible.

True/False/Do not know.

• Introduce semi-solid food from five to six months.

True/False/Do not know.

• Leprosy is not hereditary. It is a disease and not a curse of God.

True/False/Do not know.

Do not massage the baby's abdomen after birth. This is a harmful to the baby.

True/False/Do not know.

Iodised salt prevents goitre.

True/False/Do not know.

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1. Acc. No. E 19281
2. Date 7/4/89

Name of Investigator : _____

1. _____

2. _____